REMARKS

After entry of this Amendment, claims 2, 8, 24-27, 29, 31, 32, 34-39, and 41-44 are pending in the application. Claims 24, 29 and 41 have been amended to more specifically claim the subject matter which Applicants regard as the invention. Claim 28 has been canceled. Reconsideration of the application as amended is requested.

In the Office Action dated May 9, 2007, claims 2, 8, 24-29, 31-32, 34-39 and 41-44 stand rejected under 35 U.S.C.§103(a) as being unpatentable over Bashark, U.S. Patent No. 3,888, 269 in combination with Smith et al, U.S. Patent No. 5,586,567, and Thies, U.S. Patent No. 6,432,216. The Examiner asserts that it would have been obvious to one skilled in the art at the time the invention was made to determine the degree of soiling of the rinse liquid by determining the turbidity values corresponding to the recirculation of the liquid in the lower and upper spray plane as disclosed in Smith in the measurement of turbidity disclosed in Bashark. The Examiner further asserts that it would have been obvious to one of ordinary skill in the art to alternate the spray patterns in Bashark and Smith to ensure recirculation of washing liquid that is not too dirtied as taught by Thies. It is submitted that the references, taken singly or in combination, fail to disclose the invention as recited in claims 2, 8, 24-27, 29, 31-32, 34-39 and 41-44.

Claim 24, from which claims 2, 8, 25-27, 29, 31, 32, and 34-39 depend, recites a method of cleaning dishes in a dishwasher having an upper and lower spray plane. The method includes determining the turbidity values corresponding to the recirculation of the rinsing liquid in the lower spray plane and the upper spray plane where the lower and upper spray planes alternately recirculate the washing liquid and the determined turbidity values are associated with the respective spray plane in operation, determining a degree of soiling by determining a difference value corresponding to the difference between the turbidity values of the lower and upper spray arms and setting at least one operating parameter of at least one of the rinse step and the cleaning step based on the determined degree of soiling.

Claim 41, which claims 42-44 include by dependency, also discloses a method of cleaning dishes in a dishwasher having a first and second set of spray nozzles. The method includes the steps of alternately operating the first and second set of spray nozzles, determining a first turbidity value associated with the operation of the first set of nozzles, determining a second turbidity value associated with the operation of the of the second set of spray nozzles, determining a degree of soiling of the rinsing liquid based on a difference

value corresponding to the difference between the first and second turbidity values, and setting at least one operating parameter of at least one of the rinse step and the cleaning step based on the determined degree of soiling.

Applicants submit that turbidity is a used to detect the soiling of the wash liquid, but the turbidity can also be affected by the flowrate of the liquid. A higher flowrate will increase turbulences and air pockets, resulting in a higher turbidity measurement without an increase in soiling of the liquid. By comparing two turbidity measurements of the same wash liquid under different flow rates, first when the upper spray arm is in operation and a second when lower spray arm is in operation, a more accurate soiling determination can be made.

The Bashark reference discloses a dishwasher having an automatic control for determining optimum treatment of dishes based on the soiling of the dishes. *See Abstract*. The dishwasher includes a turbidity sensor for sensing the turbidity of the water charge or fill in the dishwashing chamber. *Col. 1, ll. 64-66 and col. 2, ll. 52-62*. The turbidity is determined by terminating the flow of liquid in the chamber for a period of time. At which time, the turbidity sensor senses the turbidity of the liquid that is collected above the sensor. Col. 3, ll. 7-11, col. 9, ll. 9-14 and Fig. 7. In Bashark the turbidity sensor operates when the spray arms are not in operation and the liquid is collected in the chamber above the sensor. Col. 3, ll. 4-11 and col. 5, ll.44-49. Bashark does not disclose determining the turbidity values corresponding to the recirculation of the rinsing liquid in the lower spray plane and the upper spray plane where the lower and upper spray planes alternately recirculate the washing liquid and the determined turbidity values are associated with the respective spray plane in operation and determining a degree of soiling by determining a difference value corresponding to the difference between the turbidity values of the lower and upper spray arms as recited in claim 24. Bashark is also devoid of determining a first turbidity value associated with the operation of a first set of spray nozzles, determining a second turbidity value associated with the operation of a second set of spray nozzles, and determining a degree of soiling of the rinsing liquid based on a difference value corresponding to a difference value corresponding to the difference between the first and second set of spray nozzles as recited in claim 41.

The Smith reference is relevant only for its disclosure of a turbidity sensing mechanism used in a dishwasher. As recited in Smith, the turbidity measurement is taken

during a pause after the fill step of the washing phase and during a pause following any circulation step. Col. 5, ll. 19-27. Therefore, the turbidity sensor does not determine turbidity values corresponding to the recirculation of the rinsing liquid in the lower spray plane and the upper spray plane where the lower and upper spray planes alternately recirculate the washing liquid and the determined turbidity values are associated with the respective spray plane in operation. Like Bashark, Smith is devoid of determining the turbidity values corresponding to the recirculation of the rinsing liquid in the lower spray plane and the upper spray plane where the lower and upper spray planes alternately recirculate the washing liquid and the determined turbidity values are associated with the respective spray plane in operation and determining a degree of soiling by determining a difference value corresponding to the difference between the turbidity values of the lower and upper spray arms as recited in claim 24. Applicants also respectfully submit that Smith is also devoid of determining a first turbidity value associated with the operation of a first set of spray nozzles, determining a second turbidity value associated with the operation of a second set of spray nozzles, and determining a degree of soiling of the rinsing liquid based on a difference value corresponding to the difference between the first and second set of spray nozzles as recited in claim 41.

Thies teaches a soiling sensing system for a dishwasher that includes a pressure sensor. Thies discloses that the pressure can be measured when the lower wash arm, which is directed at the lower rack and jets 66 backwash to a soil screen filer 56, is deactivated and wash liquid is supplied to the upper spray arm. Col. 5, ll. 38-41, col. 6, ll. 32-34 and claim 1. The pressure detected in the soil collector is compared to a predetermined pressure limit. If the pressure limit is exceeded by the detected pressure, the soil collector is purged. Col. 6, ll. 35-40 and claim 13. Like Bashark and Smith, Applicants can find no teaching or suggestion in Thies of determining the turbidity values corresponding to the recirculation of the rinsing liquid in the lower spray plane and the upper spray plane where the lower and upper spray planes alternately recirculate the washing liquid and the determined turbidity values are associated with the respective spray plane in operation and determining a degree of soiling by determining a difference value corresponding to the difference between the turbidity values of the lower and upper spray arms as recited in claims 24 and 41. Applicants further submit that a system that detects pressure is not the same as a system that detects turbidity and one skilled in the art would not combine the cited references to obtain

the claimed invention. Therefore, the references cited, taken singly or in combination, fail to disclose all of the features recited in claim 24, from which claims 2, 8, 25-27, 29, 31, 32, and 34-39 depend, and claim 41, from which claims 42-44 depend. Reconsideration of this rejection is respectfully requested.

It is respectfully submitted that this Amendment traverses and overcomes all of the Examiner's objections and rejections to the application and places the application in suitable condition for allowance; notice of which is respectfully requested. Reconsideration of the application as amended is requested.

Respectfully submitted,

/Tara M. Hartman/

Dated: August 7, 2007

Tara M. Hartman, Registration No. 58,805
Telephone: (269) 923-8081

WHIRLPOOL PATENTS COMPANY
500 Renaissance Drive – Ste. 102 MD750
St. Joseph, Michigan 49085

CERTIFICATE OF MAILING/TRANSMISSION (37 CFR 1.8(a))

I hereby certify that this correspondence is, on the date shown below, being:

☐ deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to the Commissioner for Patents, Alexandria, VA, 22313-1450.

☒ transmitted by EFS to the Patent and Trademark Office.

/Deborah A. Tomaszewski/
Signature

Date: August 7, 2007

Deborah A. Tomaszewski
(type or print name of person certifying)